AXIS M3114-R Network Camera

This A&E text is based upon *MasterFormat™* [2004 Edition] issued by Construction Specifications Institute (CSI) www.csinet.org/masterformat. By removing the article "*Manufactured units*", the text may be used also in performance-based specifications.

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Division 28 – Electric Safety and Security
Section 28.23.29 – Video Surveillance – Remote Devices and Sensors

PART 1 GENERAL

1.01 General Requirements

A The camera shall be of manufacturer's official product line, designed for commercial/industrial 24/7/365 use.

B The camera shall be based upon standard components and proven technology using open and published protocols.

1.02 Quality Assurance

A All camera installation, configuration, setup, program and related work shall be performed by electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.

B All equipment provided shall be backed by a minimum of one year manufacturer warranty.

C The specified unit shall be manufactured in accordance with ISO 9001 / EN 29001.

1.03 Environmental sustainability

A The specified unit shall be manufactured in accordance with ISO 14000.

B The specified unit shall be compliant with 2002/95/EG RoHS and 2002/96/EG WEEE.

1.04 Certifications and standards

A The camera shall carry the following EMC approvals:

1. EN55022, EN55024
2. FCC Part 15 - Subpart B

3. VCCI

4. C-tick AS/NZS CISPR22

5. ICES-003

B The camera shall meet relevant parts of the following video standards:

1. SMPTE 296M (HDTV 720p)

C The camera shall meet the following standards

1. MPEG-4:

   a. ISO/IEC 14496-10 AVC (H.264)

2. Networking:

   a. IEEE 802.3af (Power over Ethernet)

   b. IPv4 (RFC 791)

   c. IPv6 (RFC 2460)

   d. QoS – DiffServ (RFC 2475)

3. Mechanical Environment:

   a. IEC 60721-3-4 Class 4K3 (Climate range)

   b. IEC 62262 Class IK08 (Impact resistance)

   c. IEC 60529 IP66 & IP67 (Ingress protection)

   d. NEMA 250 Type 4X (Enclosure protection)

4. Automotive and railway use:

   a. EN 50155 Class T3 (Vibration, shock, bump & temperature)

   b. ISO 16750-3 (Vibration & shock)

   c. ECE R10 rev.03 (EMC)

PART 2 PRODUCTS

2.01 General

A The camera shall:

1. Be designed to provide least two simultaneous video streams in HDTV 720p (1280x720) resolution at 30 frames per second using H.264 or Motion JPEG.

2. Operate on an open source; Linux-based platform, and including a built-in web server.

3. Be manufactured with a tamper resistant body.

2.02 Hardware

A The camera shall:

1. Use a high quality 1/4" progressive scan sensor.

2. Provide pictures down to 1 lux.

2.03 Video

A Resolution

1. The camera shall be able to deliver at least two full frame rate video streams of resolutions up to HDTV 720p over IP networks.

2. Supported video resolutions shall include:

a. 320x240

b. 640x480

c. 800x600

d. 1024x768

e. 1280x720 (HDTV 720p)

f. 1280x800

B Encoding

1. The camera shall:

a. Support Motion JPEG encoding in a selectable range from 1 up to 30 frames per second in all resolutions.

b. Support H.264 encoding in a selectable range from 1 up to 30 frames per second in all resolutions.

c. Be able to provide independently configured simultaneous H.264 and Motion JPEG streams.

d. Support both Constant Bit Rate (CBR) and Variable Bit Rate (VBR) in H.264.

e. Provide configurable compression levels.

f. Support motion estimation in H.264.

C Transmission

1. The camera shall allow for video to be transported over:

a. HTTP (Unicast)

b. HTTPS (Unicast)

c. RTP (Unicast & Multicast)

d. RTP over RTSP (Unicast)

e. RTP over RTSP over HTTP (Unicast)

2. The camera shall support Quality of Service (QoS) to be able to prioritize traffic.

D Image control

1. The camera shall:

a. Incorporate Automatic and Manual White Balance

b. Be equipped with an electronic shutter and support automatic and manually defined exposure zones operating in the range 1/6 and 1/24.500 second.

c. Provide Wide Dynamic Range and backlight compensation with automatic and definable exposure zones.

d. Allow for rotation of the image in steps of 90º.

2.04 Functionality

A Web server

1. The camera shall contain a built-in web server making video and configuration available to multiple clients in a standard operating system and browser environment using HTTP, without the need for additional software.

2. Optional components downloaded from the camera for specific tasks, e.g. Active X, shall be signed by an organization providing digital trust services, such as Verisign, Inc.

B IP addresses

1. The camera shall support both fixed IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.

2. The camera shall allow for automatic detection of the Camera based on UPnP and Bonjour when using a PC with an operating system supporting this feature.

3. The camera shall provide support for both IPv4 and IPv6.

C Event functionality

1. The camera shall be equipped with an integrated event functionality, which can be trigged by:

   a. Video Motion Detection

   b. Schedule

   c. Camera tampering

2. Response to triggers shall include:

   a. Notification, using TCP, SMTP or HTTP

   b. Image upload, using FTP, SMTP or HTTP

3. The camera shall provide a memory buffer for pre & post alarm images.

4. Event functions shall be configurable via the web interface.

D Protocol support

1. The camera shall incorporate support for at least IP, HTTP, HTTPS, SSL/TLS, TCP, ICMP, SNMPv1/v2c/v3 (MIB-II),

RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, UPnP, ARP, DNS, DynDNS, SOCKS, NTP and Bonjour.

2. The SMTP implementation shall include support for SMTP authentication.

E Text overlay

1. The Camera shall:

   a. Provide embedded on-screen text with support for date & time, and a customer-specific text, camera name, of at least 45 ASCII characters.

   b. To ensure accuracy, the camera shall accept external time synchronization from an NTP (Network Time Protocol) server.

   c. Provide the ability to apply a privacy mask to the image.

   d. Allow for the overlay of a graphical image, such as a logotype, into the image.

F Security

1. The camera shall:

   a. Support the use of HTTPS and SSL/TLS, providing the ability to upload signed certificates to encrypt and secure authentication and communication of both administration data and video streams.

   b. Provide support for restricting access to pre-defined IP addresses only, so-called IP address filtering.

   c. Restrict access to the built-in web server by usernames and passwords at three different levels.

G API support

1. The camera shall be fully supported by an open and published API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications.

H Embedded application

1. The camera shall provide a platform allowing the upload of third party applications into the camera.

2. The camera vendor shall provide a compatibility tool for the application vendor to verify the stability and performance impact of their uploaded application.

I Installation and Maintenance

1. The camera shall:

   a. Be supplied with Windows-based management software which allows the assignment of IP addresses, upgrade of firmware and backup of the Cameras' configuration.

   b. Support the use of SNMP-based management tools according to SNMP v1, 2c & 3 / MIB-II.

   c. Allow updates of the software (firmware) over the network, using FTP or HTTP.

   d. Provide the ability to apply a rectangle of customer-defined number of pixels to the image, which can be used as a pixel counter identifying the size of objects in number of pixels.

2. All customer-specific settings shall be stored in a non-volatile memory and shall not be lost during power cuts or soft reset.

J User logs

1. The camera shall:

   a. Provide a log file, containing information about the 250 latest connections and access attempts since the unit's latest restart. The file shall include information about the connecting IP addresses and the time of connecting.

   b. Provide a connection list of all currently connected viewers. The file shall include information about connecting IP address, time of connecting and the type of stream accessed.

2.05 Camera diagnostics

A The camera shall:

1. Be equipped with LEDs, capable of providing visible status information. LEDs shall indicate the camera's operational status

and provide information about power, communication with receiver, the network status and the camera status.

2. Be monitored by a Watchdog functionality, which shall automatically re-initiate processes or restart the unit if a malfunction is detected.

2.06 Interfaces

A Network interface

1. The camera shall be equipped with one 100BASE-TX Fast Ethernet-port and shall support auto negotiation of network speed (100 MBit/s and 10 MBit/s) and transfer mode (full and half duplex).

2. The connector shall be a rugged version and of RJ-45 or M12 type.

2.07 Enclosure

A The camera enclosure shall include the following:

1. Tamper resistant rugged aluminum body providing encapsulated electronics.

2. Integrated dehumidifying membrane

3. Clear transparent lens cover

B The camera enclosure shall provide the ability to adjust the camera modules angle with at least ±45° tilt, ±30° pan and ±180° rotation while maintaining an image that is not interfered with by the camera housing.

2.08 Power requirements

A Power over Ethernet according to IEEE 802.3af - Class 1.

2.09 Environmental

A The camera shall:

1. Operate in a temperature range of -25°C to +50°C (-13°F to +122°F).

2. Operate in a humidity range of 20–80% RH (non-condensing).

2.010 Manufactured units

A The camera shall be an AXIS M3114-R Network Camera.

[Remove above article if this is to be a performance-based specification.]

PART 3 EXECUTION

3.01 Installation

A The Contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.

B All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.

C All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the provider of the Video Management Application (VMA) or Network Video Recorder (NVR).

D All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.